Operations Notes: The View from the Ground

MCR Group

Presented by Lee Hammons

RHIC Retreat 2005

Operations Session

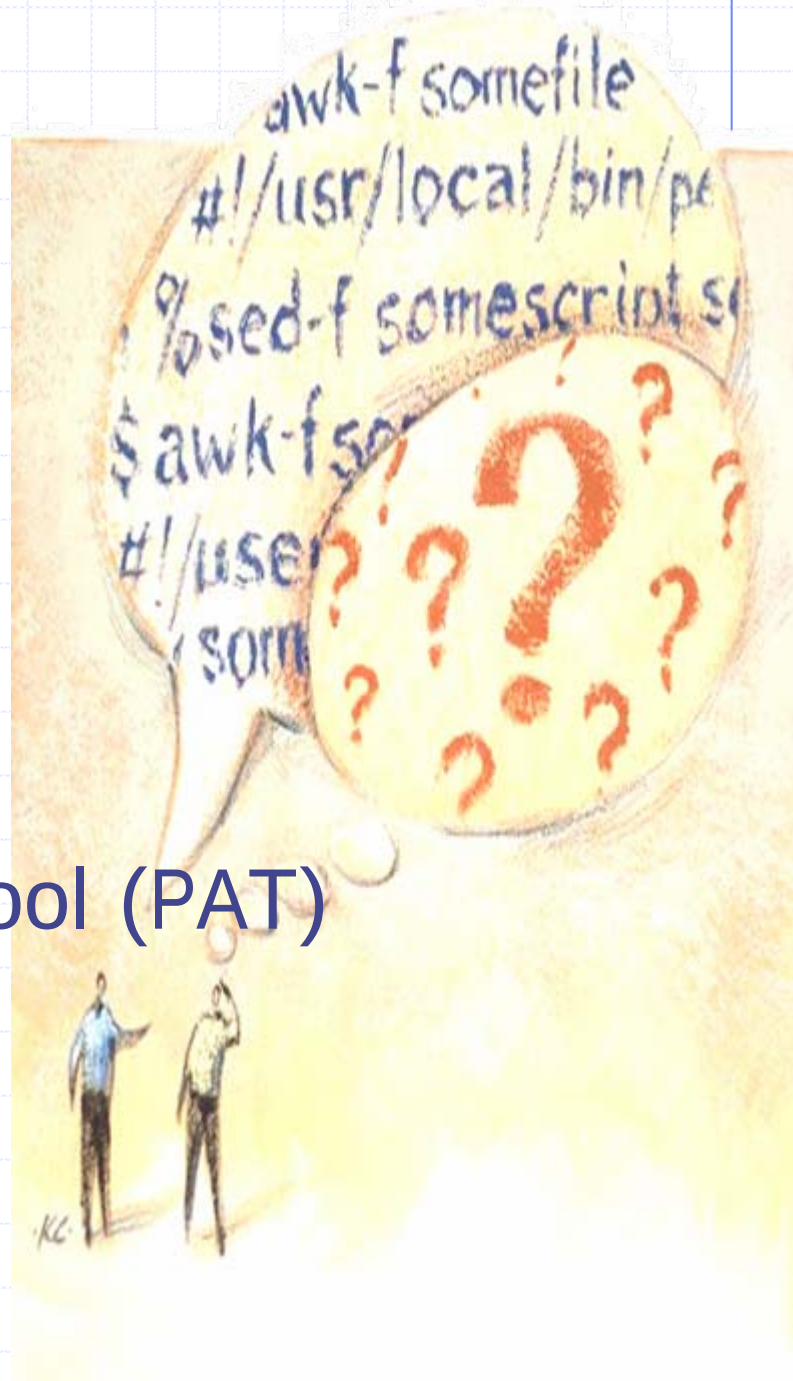
Thursday, 16 June

Areas of Concern

- Applications
- Processes
- Injector Operation
- Communication
- Working Conditions

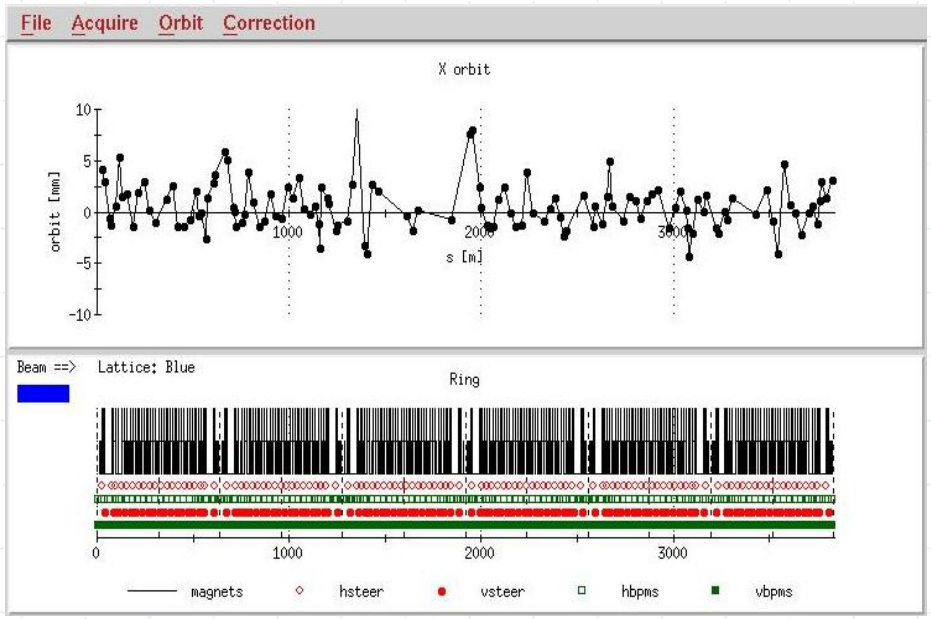
Applications

- RHIC Orbit Display
- Ramp Editor
- RHIC Loss Monitor
- Sequencer
- Polarimeter Analysis Tool (PAT)



RHIC Orbit Display

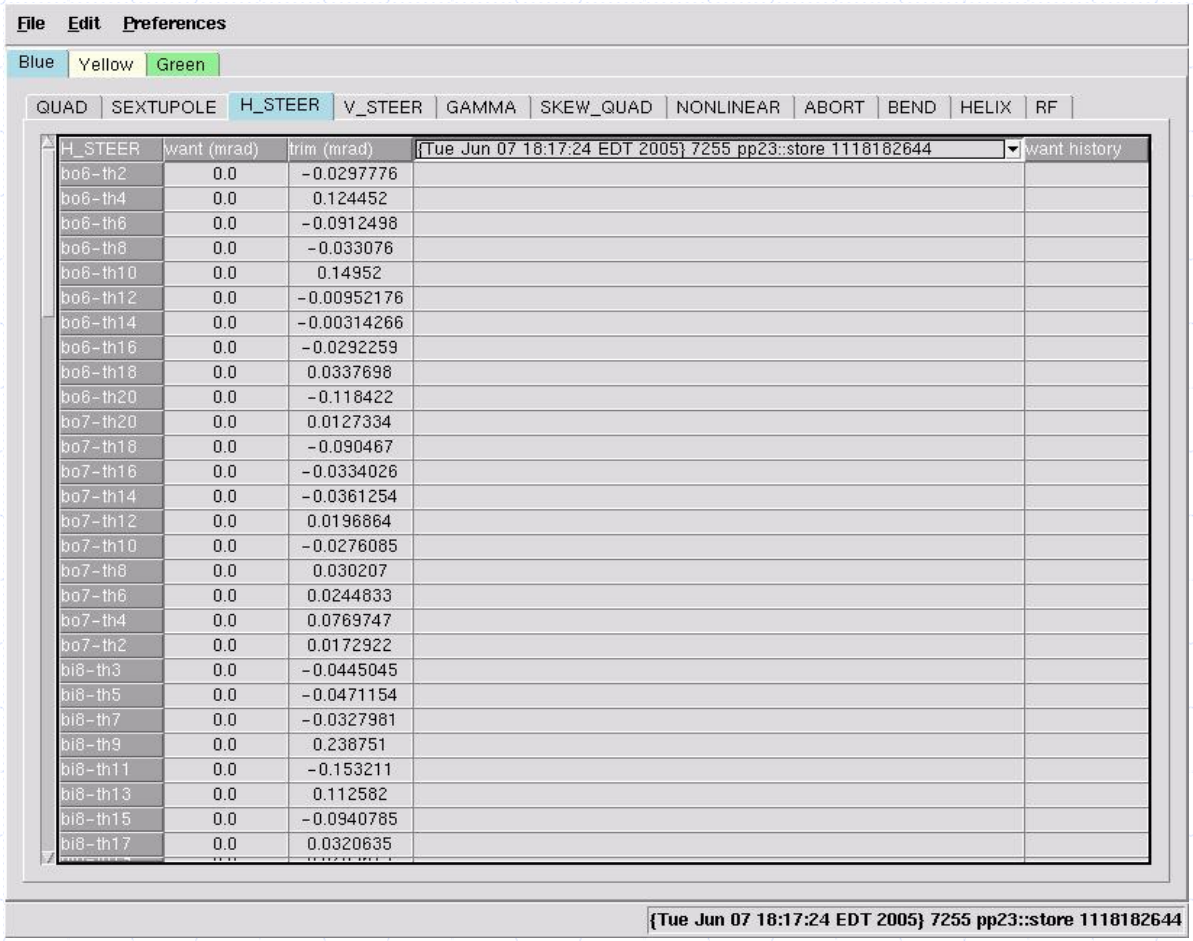
- Wrap around STAR
- Trigger orbits within application
- Single application
- Minimize number of open windows



Ramp Editor

- Readback of wfgManager status
  - Number of power supplies moved
  - Completion status
  - Current stepstone
- Ramp reversion for individual stones
- Better interface for selecting ramp files for individual stones
- Filter ramp data by fill number

Ramp Reversion



RHIC Loss Monitor

- Option to:
  - See percentage of beam loss threshold or rad/hr
  - View slow or accumulated loss monitors

Sequencer

- Cryptic error messages
- Difficult to:
  - Trace progress of script execution after error
  - Trace script execution status

```
Tue Jun 14 10:31:52 EDT 2005 sequencer: ::RHIC::Instrumentation::Artus::TurnSetup1
Tue Jun 14 10:31:53 EDT 2005 sequencer: ::RHIC::Instrumentation::BPM::aveOrbit::SnapshotStoreAll
Tue Jun 14 10:31:57 EDT 2005 sequencer: set clockC AdoService Error: Device: delayChannel.4a-rftime.A5, PropertyId: clockC, commTools - client: server host not reachabl
Tue Jun 14 10:31:57 EDT 2005 sequencer:
Tue Jun 14 10:31:57 EDT 2005 sequencer: ::RHIC::Systems::RF::TriggerRfAcc
Tue Jun 14 10:31:57 EDT 2005 sequencer: Trigger ev-rfacc
```

Polarimeter Analysis Tool (PAT)

- Behavior can be unpredictable – needs to be more reliable
- Integration of AGS, LINAC, and jet data
- All data should be logged automatically
- Polarization measurement integrated into C-A control system

Processes

- Sequencing and Automation
- Use of E-log
- Application Maintenance
- Maintenance Periods
- PASS

Sequencing and Automation

- Backsliding in following areas:
  - Auto-steering
  - Auto-collimation
  - Ramp orbit correction
  - Calling BRAHMS to ramp magnets
  - Storage cavities and removal of dampers
  - Lack of alarms and indicators

E-log

- Use of tags, esp. the instruction tag
- Inappropriate communication in e-log
  - Questions or comments that waste space and time
  - Chats
- Be thoughtful and conservative in comments, but be complete and specific
- Be careful in responding to old entries
- Start e-logs related to specific groups or topics

Application Maintenance

- Application features must be maintained by experts
  - Default values checked and updated as needed
  - Configuration files appropriately maintained
  - Features updated, improved, changed, or removed as necessary
  - Incorrect and faulty features removed

Application Documentation and Training

- New applications appropriately documented:
  - Name of creator
  - Date of creation
  - Purpose of application
- More training
- Operator involvement in application development

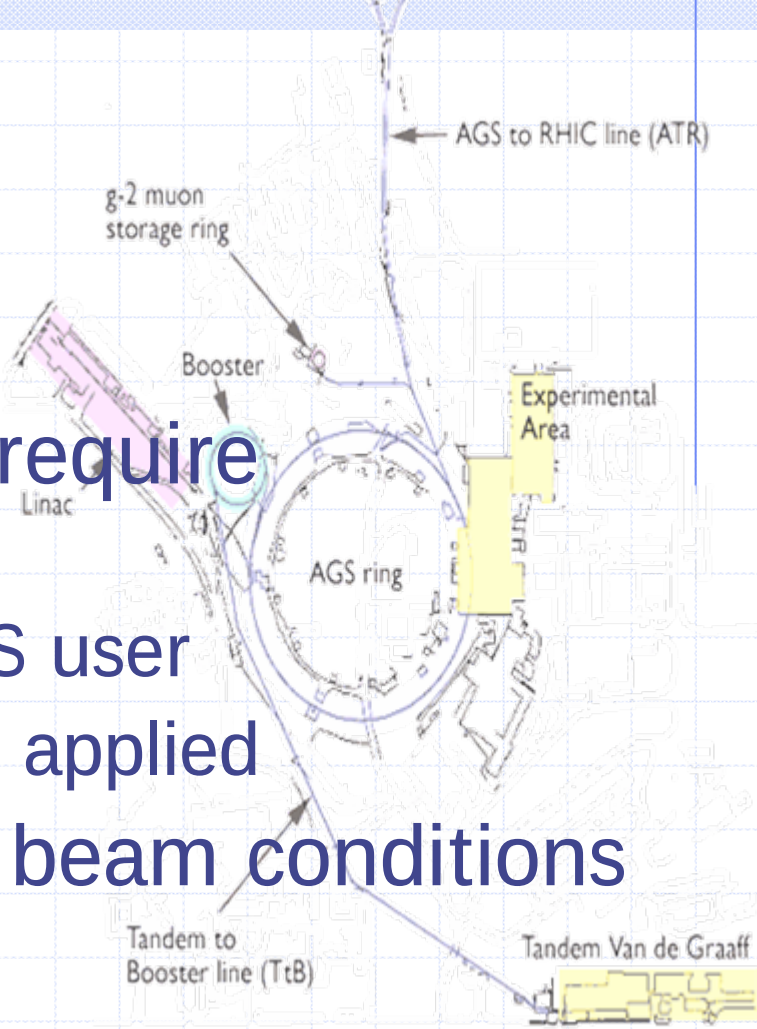
Maintenance Periods

- Maintenance periods difficult to manage and coordinate
  - Work performed without knowledge or permission of Operations/Maintenance staff
  - Failures during day can delay schedules
  - Minimize last-minute items
- Many “bosses”
- Enough time must be allotted
- Complicated setups complicate recovery

PASS

- PASS response slow
- Camera view limited to certain combinations
- Mode switching behavior unpredictable
- Gates at 2GI1, XGI1, and YGI1 are problematic
- No multimode selection options in RHIC
- Move Booster injection keyswitches to 911

Injector Operation



- Multiplexer and scalars require upgrades
  - Readouts defined by AGS user
  - Calibrations not properly applied
- Time and awareness of beam conditions in injectors
- Coordination of all injector components complicated

Communication

- Programmatic Goals
- Procedures
- Schedules
- Applications

Communication between Physics and Operations

- Experience and ideas from operators not always heard or acknowledged
- Operators must be allowed to perform duties, exercise appropriate judgment
  - Unprofessional atmosphere
  - Fosters resentment and lack of trust
  - Harms productivity and adds cost
- Lack of clarity about machine setup, operating parameters
- Collaboration

Communication between Operations and Experiments

- Clear, consistent approach
- Roles of authority need clarification
- Civility is expected
- Understanding is required

Working Conditions

- Diagnostic equipment requires more frequent maintenance and replacement
- Chairs need replacement
- Soundproofing requires improvement
- Air conditioning and ventilation should be improved
- Dust control
- Additional housekeeping